Engineering Division
W514

RADIOSONDE MODIFICATION NOTE No. 22
(For Electronics Technicians)

SUBJECT : Cable Replacement for Radiosonde Power Supply and Battery Tester, Model 1271-161.

PURPOSE : To modify the Radiosonde Power Supply Battery Tester, for use with the new series of Radiosonde and Batteries. Also to provide compatibility and uniformity with the new Radiosonde Battery Tester.

EQUIPMENT AFFECTED : Radiosonde Power Supply and Battery Tester, Model 1271-161 (Dual Meter).

PARTS REQUIRED :

Quantity	Description
1	Female 29" Pigtail Cable
1	Male 29" Pigtail Cable
1	Adapter Cable 1271-181
1	Adapter Cable 1271-182
1	10K-Ohm Resistor 1/2 watt (local purchase)
As required	22 Gauge Wire (local purchase) color optional.

MOD PROCUREMENT : CLSC has already supplied a modification assembly kit to all NWS Upper-Air Stations. A 10K-Ohm resistor will be furnished upon request.

SPECIAL TOOLS REQUIRED : None

TEST EQUIPMENT : Volt Ohm Meter or Digital Volt Meter.

TIME REQUIRED : 2-1/2 Work Hours.

General: This modification will update the radiosonde power supply and battery tester, for use with the new series of radiosondes and batteries.

PROCEDURE:

1. Remove AC power.

2. Remove cover from power supply and battery tester, Model 1271-161.

3. Remove cord relief bushings from front panel cables.

4. Battery cable male plug: CAUTION: Remove the wires in the battery cable only.

   a) Unsolder and remove green wire at switch S1, position 7. (Meter Select Switch). See Figure 1.

4. b) Unsolder and remove white wire at switch S1, position 3. (Meter Select Switch). See Figure 1.

c) Remove black wire at printed circuit board reference designator No. 1. See Figure 2.

d) Note hole location on panel for battery cable. Remove cable.

5. Radiosonde Cable Female Plug: CAUTION: Remove the wires in the Radiosonde Cable only.

a) Unsolder and remove green wire at switch S2, position 5. (Mode Switch). See Figure 1.

b) Unsolder and remove white wire at switch S2, position 1. (Mode Switch). See Figure 1.

c) Unsolder and remove black wire at printed circuit board reference designator No. 4. See Figure 2.

d) Note hole location on panel for radiosonde cable. Remove cable.

6. Meter Select Switch S1:

a) Unsolder and remove wires from the following positions of switch S1. Positions 1, 2, 3, 5, and 6. NOTE: Leave green wire on position 7, connected. See Figure 1 for wire and position reference.

7. Mode Switch S2:

a) Remove wires from the following positions of switch S2. Positions 1, 2, 3, and 6. NOTE: Leave green wire on position 7, connected. Disconnect wires at positions 9 and 10 of switch S2, do not disconnect opposite end. See Figure 1 for wire and position reference.

8. Resistor R11:

a) Disconnect the green wire at R11, leave opposite end connected to switch S2, position 7.

9. Meter 0-22V:

a) Remove the orange wire at plus side of meter, going to position 5 of switch S1. See Figure 1.

10. Meter 0-10V:

a) Remove-and save-orange wire, at plus side of meter, going to position 1 of switch S1. See Figure 1.

11. Battery Cable Wiring Connections:

a) Feed pigtail cable, through hole in front panel, previously noted for battery cable.

b) Solder white wire to position 7 of switch S1. See Figure 4.

c) Solder black wire to reference designator No. 1, on printed circuit board. See Figure 2.

d) No connection on green wire, cut back to insulation and dress lead.

e) Install cord relief bushing.

12. Radiosonde Cable Female Plug Wiring Connections:

a) Feed pigtail cable, through hole in front panel, previously noted for radiosonde cable.

b) Hook white wire to position 6 of switch S1, do not solder at this time.

c) Solder black wire to reference designator No. 4, on printed circuit board. See Figure 2.

d) No connection on green wire, cut back to insulation and dress lead.

e) Install cord relief bushing.

13. Meter Select Switch S1 Wiring Connections:

a) Cut a 9-inch length of 22 gauge wire. Solder one end to position 5 of switch S1.

b) Cut a 9-inch length of 22 gauge wire. Solder to position 6 of switch S1.

c) This completes wiring connections for switch S1, refer to Figure 4 for pictorial wiring configuration.

14. Mode Switch S2 Wiring Connections:

a) Cut a 10-inch length of 22 gauge wire. Solder to position 1 of switch S2. Feed opposite end through hole near S1, and solder to printed circuit board designator No. 16.

b) Cut a 2-inch length of 22 gauge wire. Solder one end to position 2 of switch S2. Hook opposite end to position 11 of switch S2. Take wire coming from position 6 of switch S1, hook to position 11 of switch S2 and solder both wires.

c) Using orange wire removed from the 0-10V meter, connect the terminal end to plus side of the 0-22V meter. Take opposite end and solder to position 5 of switch S2.

14. d) Take wire coming from position 5 of switch S1 and solder to position 6 of switch S2.

e) Use existing green wire removed from one end of R11, cut to about 2 inches, solder to position 9 of switch S2.

f) Solder wire that was disconnected from position 9 of switch S2 to position 10 of switch S2.

g) This completes wiring connections for switch S2. Refer to Figure 4 for pictorial wiring configuration.

15. Resistor R11 Hookup:

a) Solder black wire that was disconnected from position 10 of switch S2 to the open end of R11.

16. Printed Circuit Board:

a) Unsolder yellow leads at T1, transformer and label.

b) Remove the four screws from printed circuit board.

c) Remove the insulator from beneath the printed circuit board and save.

d) Use Figure 2 and locate R12, unsolder and remove this component. Take a 10K-ohm resistor, insert one lead into hole nearest diode (DI) and solder. Cut a 8-inch length of 22 gauge wire. Solder this wire to loose end of the 10K-ohm resistor. Feed the opposite end of this wire through center hole in chassis and solder to the plus side of the 0-22V meter. Refer to Figures 2 and 4 for pictorial view.

e) Locate diode (DI), unsolder and remove this component from printed circuit board. Solder a jumper wire in holes left vacant by removal of diode (DI).

f) Place insulator, beneath printed circuit board, align holes and install screws.

g) Solder yellow leads removed from T1, transformer to proper terminals.

Continuity Check:

a) Refer to Figure 3 for pigtail cable pin configuration.

b) Refer to Figure 2 for printed circuit board reference designation.

BATTERY CABLE MALE PLUG:

FROM:	TO MOLEX CONNECTOR:
White lead, position 7 switch S1	Pin C
Green lead, no connection	Pin B
Black lead, P/C board designator 1	Pin A

RADIOSONDE CABLE FEMALE PLUG:

FROM:	TO MOLEX CONNECTOR:
White lead, position 6, switch S1	Pin C
Green lead, no connection	Pin B
Black lead, P/C board designator 4	Pin A

METER SELECT SWITCH S1:

FROM:	TO:
Position 1	N/C
2	N/C
3	N/C
5	Position 6, switch S2
6	Radiosonde cable pin C and positions 2 & 11 switch S2
7	Positions 7 & 9 switch S2

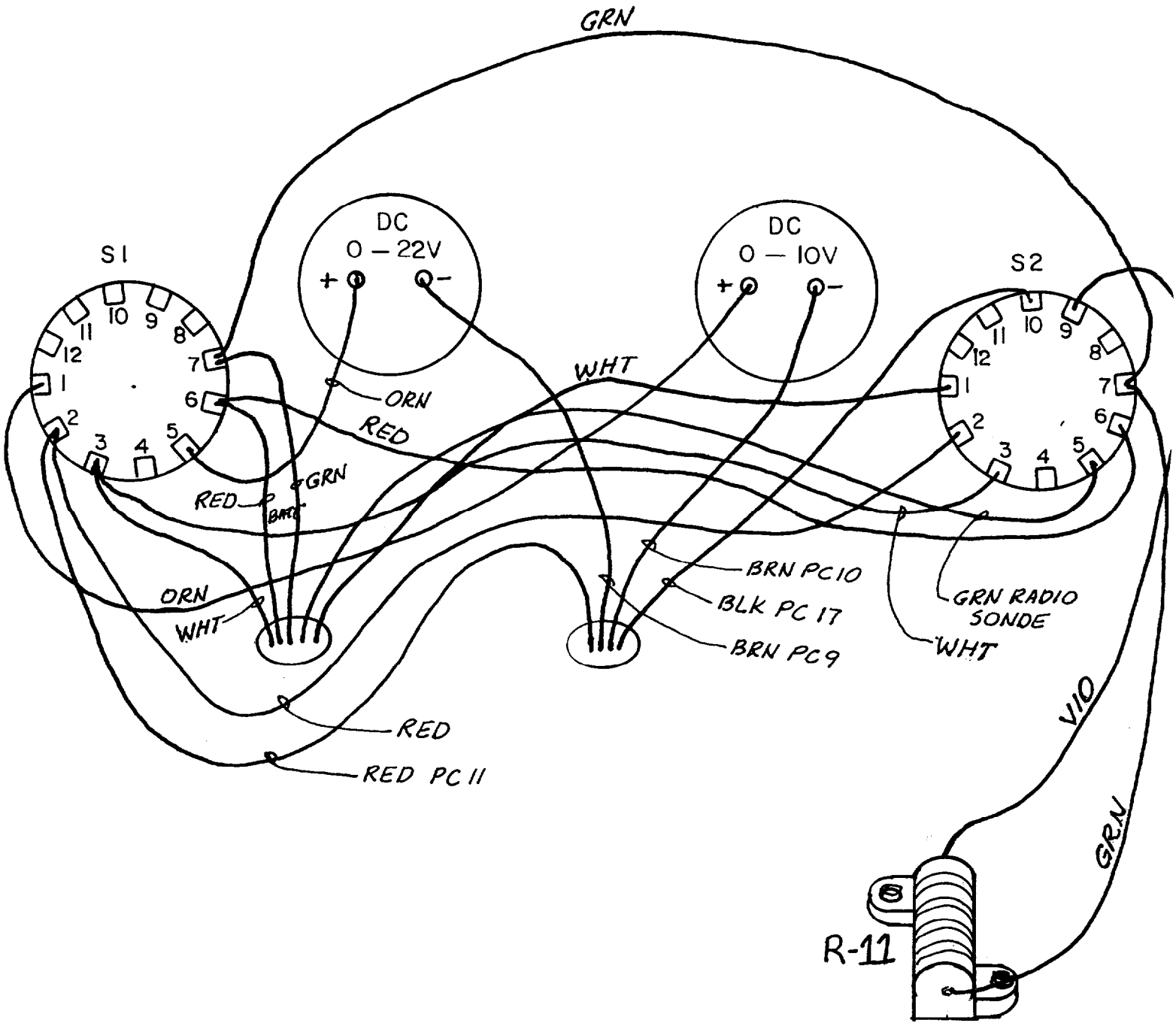
MODE SWITCH S2:

FROM:	TO:
Position 1	P/C board designator 16
2	Position 11 switch S2 & position 6 switch S1
5	0-22V Meter & R12
6	Position 5, switch S1
7	Position 9, switch S2 & position 7, switch S1
10	R11 Resistor (violet lead)

MANUAL CHANGES:

Insert Schematic into Solid State Radiosonde Tester Manual.

Attachments: Figure #1, Original Wiring of Meter and Mode Switches, S1 and S2.
Figure #2, Printed Circuit Board.
Figure #3, Pigtail Cable.
Figure #4, Wiring Connections of Meter and Mode Switches, S1 and S2 after Modification.
Revised Schematic - 1271-161.
Voltage Calibration Procedure.



BACK VIEW OF FRONT PANEL

FIG. 1

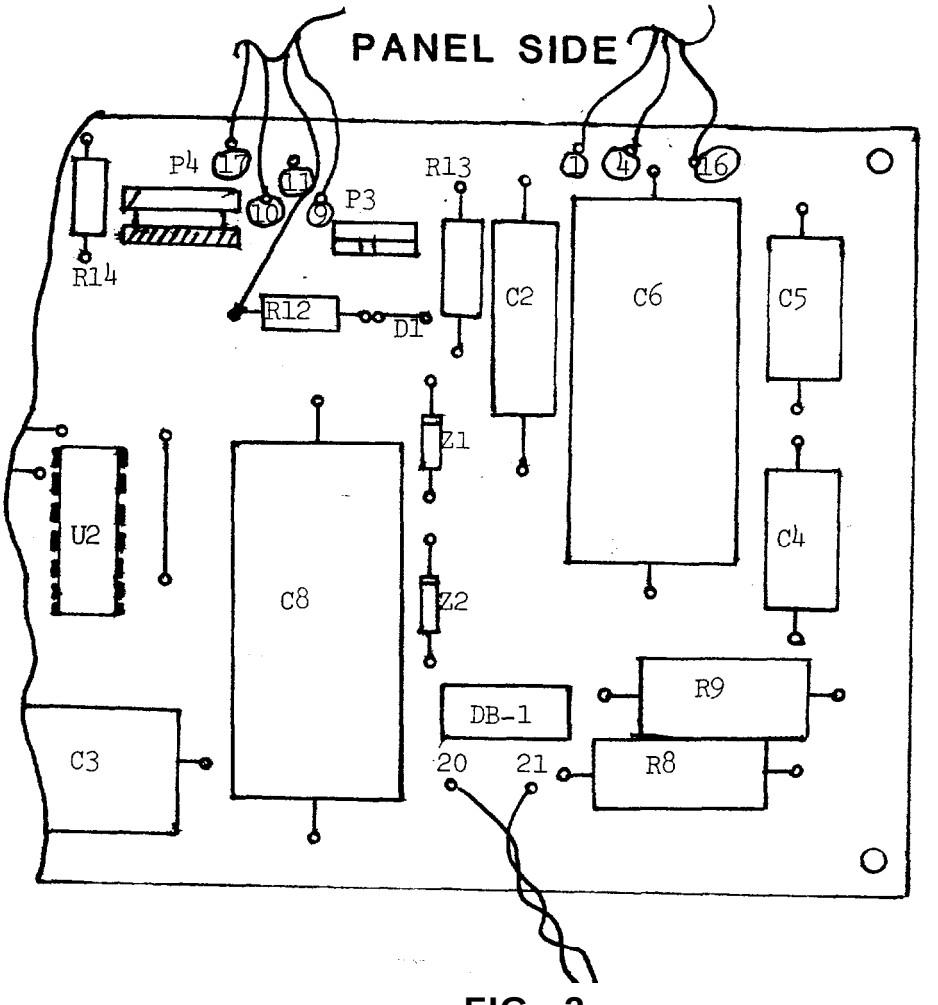


FIG. 2

NOTE: Circled numbers are reference designators.

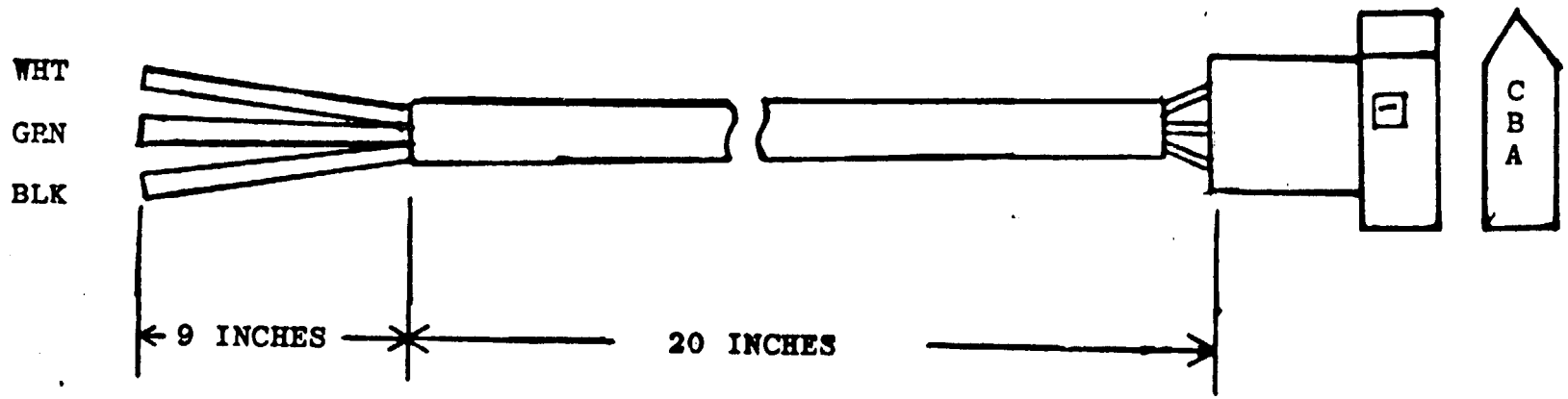
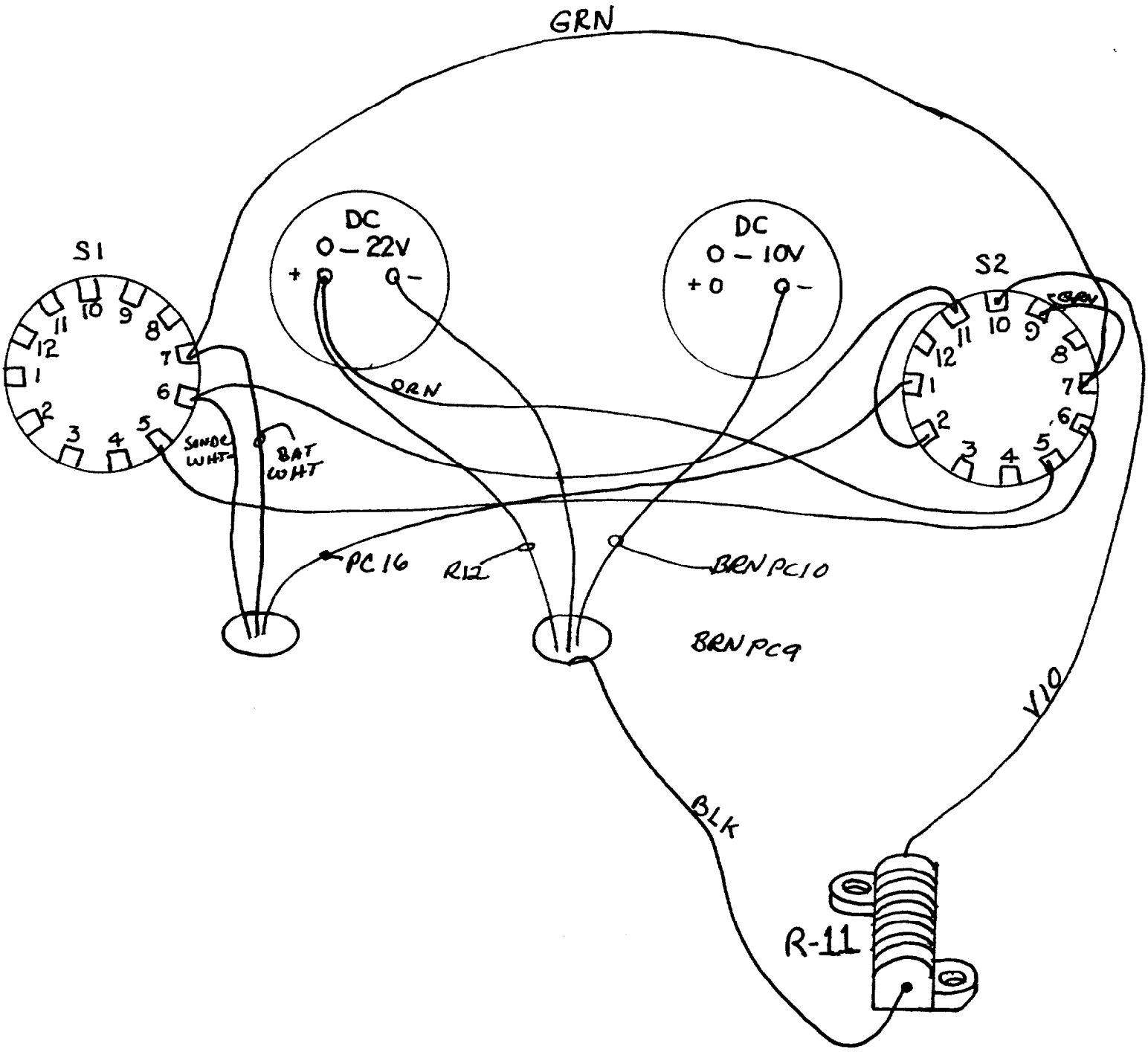


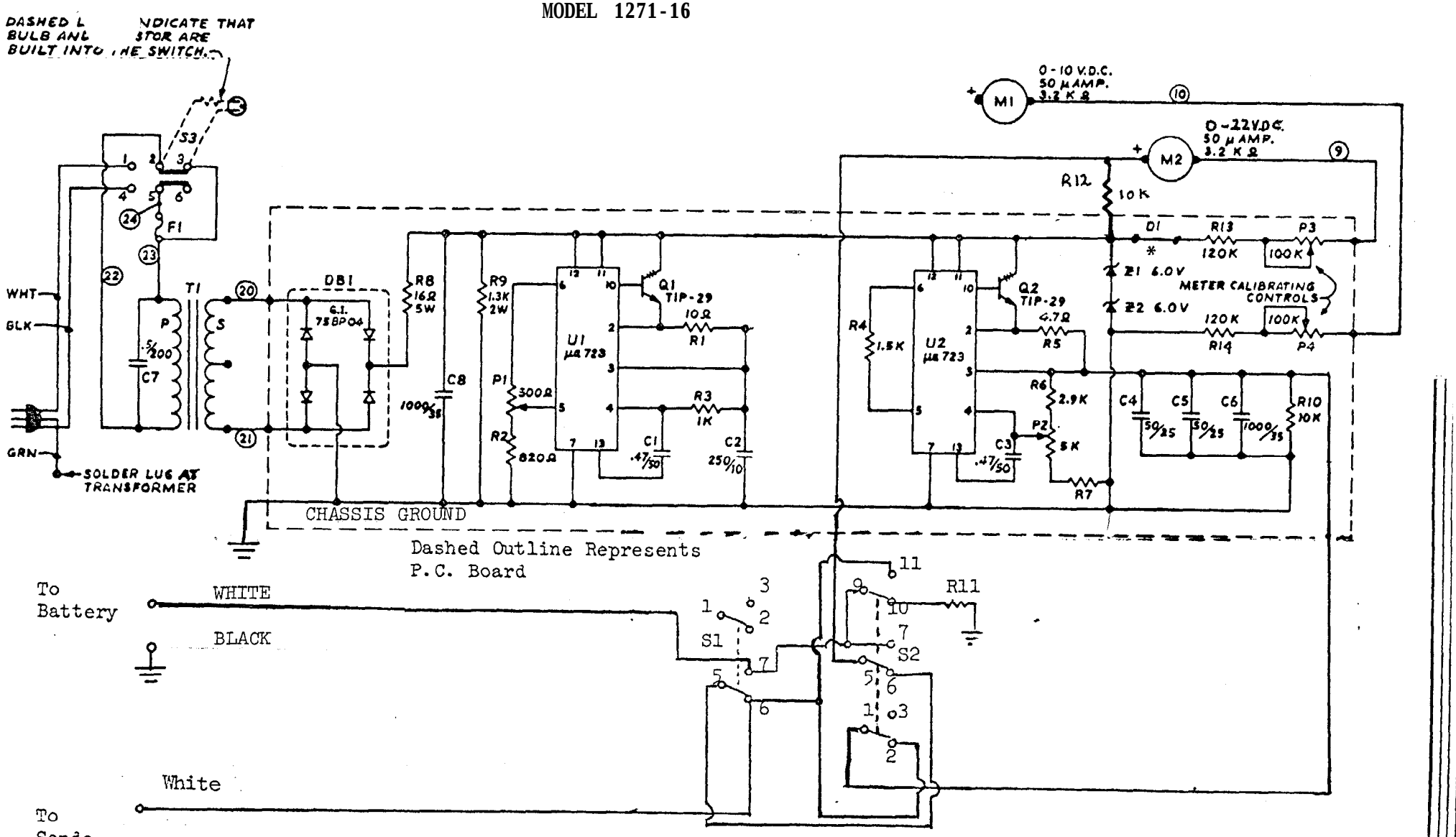
FIG. 3

PIGTAIL CABLE ASSEMBLY



BACK VIEW OF FRONT PANEL

FIG. 4



NOTES:

1.* Jumper for D1.
2. Unless noted, all resistors are ½ W 10 %.
3. Meter Select switch, S1, shown in Radiosonde position.
4. Mode Switch, S2, shown in Test/Actuate position.

RADIOSONDE BATTERY ELIMINATOR AND TESTER

VIZ MANUFACTURING CO

1271-161